

ASSIGNMENT REC  
-PA-

08-29-2001



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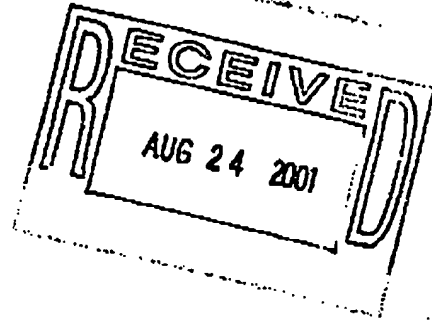
To: Honorable Commissioner of Patents and Trade.

Please record the attached original document(s) or copy thereof.

## 1. Name of conveying party(ies)

- a) Steven R. Spielman  
b) Yung Cheng Lo  
c) David C. Lee  
d) Judith C. Powelson

08/24/01



## 2. Name and address of receiving party(ies):

- a) Name: Calimetrix, Inc.  
b) Address: 815 Atlantic Avenue #105  
Alameda, CA 94501

## 3. Nature of conveyance

- |                                     |                    |                          |                   |
|-------------------------------------|--------------------|--------------------------|-------------------|
| <input checked="" type="checkbox"/> | Assignment         | <input type="checkbox"/> | Merger            |
| <input type="checkbox"/>            | Security Agreement | <input type="checkbox"/> | Change of Name    |
| <input type="checkbox"/>            | Other _____        | <input type="checkbox"/> | License Agreement |

Execution Date: August 14, 2001

## 4. Application Number(s) or Patent Number(s): 09/828,311

The title of the (new) application is:

DIGITAL AUTOMATIC GAIN CONTROL OF A MULTILEVEL OPTICAL DISC READ SIGNAL

## 5. Please send all correspondence concerning this (these) documents to:

Customer No. 21912  
Van Pelt & Yi LLP  
4906 El Camino Real, Suite 205  
Los Altos, CA 94022  
(650) 903-3500 (PH)  
(650) 903-3501 (FX)

## 6. Total number of applications and patents involved: 1

## 7. Total fee (37 CFR 3.41): \$40.00

- ☒ Enclosed  
☒ Any deficiencies are hereby authorized to be charged to Deposit Account No. 50-0685 (Order No. CALMP016)

## 8. To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Date: August 17, 2001

William J. James  
William J. James  
Registration No. 40,661

08/29/2001 LNUELLER 00000010 09828311

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40.00 OP

Attorney Docket No. CALMP016

PAGE 7/14 \* RCVD AT 2/3/2004 6:46:55 PM [Eastern Standard Time] \* SVR:USPTO-EFXXRF-1/1 \* DNIS:8729306 \* CSID:408 433 7460 \* DURATION (mm-ss):03-56

**ASSIGNMENT OF PATENT APPLICATION**

(Not Accompanying Application)

Whereas I/we the undersigned inventor(s) have invented certain new and useful improvements as set forth in the patent application entitled:


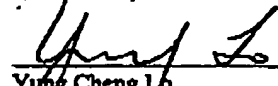
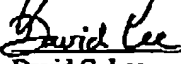

**DIGITAL AUTOMATIC GAIN CONTROL OF A MULTILEVEL OPTICAL DISC READ SIGNAL**

for which I (we) have executed an application for a United States Letters Patent which was filed in the U.S. Patent and Trademark Office on April 6, 2001, and which bears the Application No. 09/828,311..

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I/We the undersigned inventor(s) hereby:

- 1) Sell(s), assign(s) and transfer(s) to Calimetrics, Inc. a California corporation having a place of business at 815 Atlantic Avenue #105, Alameda, CA 94501 (hereinafter referred to as ("ASSIGNEE"), the entire right title and interest in any and all improvements and inventions disclosed in, application(s) based upon, and Patent(s) (including foreign patents) granted upon the information which is disclosed in the above referenced application.
- 2) Authorize and request the Commissioner of Patents to issue any and all Letters Patents resulting from said application or any division(s), continuation(s), substitutes(s) or reissue(s) thereof to the ASSIGNEE.
- 3) Agree to execute all papers and documents and, entirely at the ASSIGNEE's expense, perform any acts which are reasonably necessary in connection with the prosecution of said application, as well as any derivative applications thereof, foreign applications based thereon, and/or the enforcement of patents resulting from such applications.
- 4) Agree that the terms, covenants and conditions of this assignment shall inure to the benefit of the Assignee, its successors, assigns and other legal representative, and shall be binding upon the inventor(s), as well as the inventor's heirs, legal representatives and assigns.
- 5) Warrant and represent that I/we have not entered, and will not enter into any assignment, contract, or understanding that conflicts with this assignment.

Signed on the date(s) indicated beside my (our) signature(s).

- |    |   |                          |
|----|---|--------------------------|
| 1) | Signature: <u></u> | Date: <u>14 Aug 2001</u> |
|    | Typed Name: Steven R. Spielman  |                          |
| 2) | Signature: <u></u> | Date: <u>8/14/01</u>     |
|    | Typed Name: Yung Cheng Lo   |                          |
| 3) | Signature: <u></u> | Date: <u>8/14/01</u>     |
|    | Typed Name: David C. Lee  |                          |
| 4) | Signature: <u></u> | Date: <u>8-14-01</u>     |
|    | Typed Name: Judith C. Powelson  |                          |

Atty Dkt. No. CALMP016

**GENERAL PATENT ASSIGNMENT**

WHEREAS, Calimetrics, Inc., a California corporation ("Assignor") owns the patents and patent applications listed and described on Schedule A attached hereto (the "Patents"); and

WHEREAS, Assignor and LSI Logic Corporation ("Assignee") have entered into an Asset Purchase Agreement dated November 21, 2003, pursuant to which Assignor has agreed, *inter alia*, to grant to Assignee all of Assignor's right title and interest in and to the Patents and Assignee desires to acquire the entire right, title and interest in and to the Patents.

NOW, THEREFOR, in consideration of the foregoing and the sum of One Dollar (\$1.00), and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignor does hereby irrevocably sell, assign, convey and transfer unto Assignee, the entire right, title and interest in and to the Patents, anywhere in the world, including any patents issuing from or based upon all patent applications thereon, any foreign counterparts thereof, and any continuations, continuations-in-part, divisions, reissues or extensions of the foregoing, and including, without limitation, the right to sue for and recover damages for any past, present or future infringement of the foregoing, the same to be held and enjoyed by Assignee for its own use, and for its legal representatives and assigns, to the full end of the term for which patents are granted, as fully and entirely as the same would have been held by Assignor had this assignment and sale not been made.

Assignor agrees to execute, any further papers and to do such other acts as may be necessary and proper, or otherwise required by the Asset Purchase Agreement, to vest full title in and to the Patents in Assignee.

IN WITNESS WHEREOF, Assignor has caused these presents to be duly executed in a manner appropriate thereto as of the 21st day of November 2003.

CALIMETRICS, INC.

By: 

Name: Kenneth C Campbell

Title: President & CEO

**ACKNOWLEDGMENT**

State of California )  
 ) ss:  
County of San Bernardino

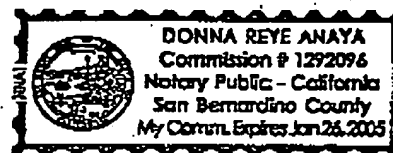
On this 20<sup>th</sup> day of November 2003, before me, the undersigned, personally appeared Kenneth C. Campbell, ☐ personally known to me - OR - ☒ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Signature: Donna Reye Anaya

Notary Public

(Seal)



## SCHEDULE A

### Patents and Patent Applications

#### Issued Patents:

#### Calimetrics Original Issued US Patents (17)

Patent No.	Title	Inventors	Filing Date	Issue Date
5,818,806	Method and Apparatus for Providing Equalization for the Reading of Marks on Optical Data Storage Media	Wong, Spielman	5/6/1997	10/6/1998
5,854,779	Optical Disc Reader for Reading Multiple Levels of Pits on an Optical Disc	Johnson, B; McDermott; O'Neil; Pietrzyk; Spielman; Wong	1/5/1996	12/29/1998
6,115,348	Information Storage Systems Utilizing Media With Optically Differentiated Data Sites	Guerra	12/24/1997	9/5/2000
6,148,428	Method and Apparatus for Modulation Encoding Data for Storage on a Multi-Level Optical Recording Medium	Welch; Wong; McLaughlin	5/21/1998	11/14/2000
6,249,507	Information Storage Systems Utilizing Media With Optically Differentiated Data Sites	Guerra	8/15/2000	6/19/2001
6,269,060	Programmable Write Signal Generator	Harvey; Swuito	9/9/1999	7/31/2001
6,275,458	Method and Apparatus for Reading and Writing A Multi-Level Signal from an Optical Disc	Wong; Spielman; Lee; Martin	2/18/1999	8/14/2001
6,377,529	Method for Providing Improved Equalization for the Reading of Marks on Optical Data-Storage Media	Lee; Ling; Lo; McLaughlin	6/1/2000	4/23/2002
6,381,724	Method and Apparatus for Modulation Encoding Data for Storage on a Multi-Level Optical Recording Medium	Welch; Wong; McLaughlin	8/22/2000	4/30/2002
6,385,255	Coding system and Method for Partial Response Channels	McLaughlin; Lee; Zingman; Fan	8/8/1999	5/7/2002
6,398,789	Data Storage System and Methods Using Diffractive Near-Field Optics	Guerra; Kendra	2/27/1998	5/28/2002
6,504,807	Programmable Write Signal Generator	Harvey; Swuito	6/7/2001	1/7/2003
6,604,219	DC Control of a Multilevel Signal	Lee, Fan, Lo	2/2/2000	8/5/2003
6,608,807	Generating a Multilevel Calibration Sequence for Precompensation	Lee	2/2/2000	8/19/2003
10/302,761	Programmable Write Signal Generator (allowed)	Harvey; Swuito	11/22/2002	
09/910,464	Method and Apparatus for Reading and Writing A Multi-Level Signal from an Optical Disc (allowed)	Wong; Fan; Lee, Ling, Lo, McLaughlin; McPheters, Martin, Powelson; Spielman; Warland, Zingman	7/19/2002	
09/745,748	Optical Disk Initialization Method and Apparatus (allowed)	Guerra; Vezenov	12/22/2000	

### Acquired Issued US Patents (20)

Patent No.	Title	Inventors	Filing Date	Issue Date
5,113,387	THREE LASER OPTICAL DISK DRIVE SYSTEM	Goldsmith, Ziegler	12/12/1989	5/12/1992
5,128,849	OPTICAL DISK STRUCTURES FOR ELECTRON TRAPPING OPTICAL MEMORY MEDIA	Podraczky, Ziegler	12/12/1989	7/7/1992
5,195,082	OPTICAL DISK STRUCTURES FOR ELECTRON TRAPPING OPTICAL MEMORY MEDIA	Revay, Brower, Espin	4/22/1992	3/16/1993
5,537,382	PARTIAL RESPONSE CODING FOR A MULTI-LEVEL OPTICAL RECORDING CHANNEL	McLaughlin, Calderbank, Larpia, Gorpheide	11/22/1994	
5,657,014	M=7(3,7) RUNLENGTH LIMITED CODE FOR MULTI-LEVEL DATA	McLaughlin	5/12/1995	8/12/1997
5,659,310	M=5(0,2) RUNLENGTH LIMITED CODE FOR MULTI-LEVEL DATA	McLaughlin	5/12/1995	8/19/1997
5,659,311	M=6(2,4) RUNLENGTH LIMITED CODE FOR MULTI-LEVEL DATA	McLaughlin	5/12/1995	8/19/1997
5,663,722	M=10(3,6) RUNLENGTH LIMITED CODE FOR MULTI-LEVEL DATA	McLaughlin	5/12/1995	9/2/1997
5,663,723	M=7(1,3) RUNLENGTH LIMITED CODE FOR MULTI-LEVEL DATA	McLaughlin	5/12/1995	9/2/1997
5,668,546	M=6(3,6) RUNLENGTH LIMITED CODE FOR MULTI-LEVEL DATA	McLaughlin	5/12/1995	9/16/1997
5,670,958	M=5(3,7) RUNLENGTH LIMITED CODE FOR MULTI-LEVEL DATA	McLaughlin	5/12/1995	9/23/1997
5,675,330	M=5(4,11) RUNLENGTH LIMITED CODE FOR MULTI-LEVEL DATA	McLaughlin	5/12/1995	10/7/1997
5,680,128	M=6(3,8) RUNLENGTH LIMITED CODE FOR MULTI-LEVEL DATA	McLaughlin	5/12/1995	10/21/1997
5,682,154	M=4(1,2) RUNLENGTH LIMITED CODE FOR MULTI-LEVEL DATA	McLaughlin	5/12/1995	10/28/1997
5,682,155	M=6(4,11) RUNLENGTH LIMITED CODE FOR MULTI-LEVEL DATA	McLaughlin	5/12/1995	10/28/1997
5,748,117	M=8(1,3) RUNLENGTH LIMITED CODE FOR MULTI-LEVEL DATA	McLaughlin	5/12/1995	5/5/1998
5,748,118	M=7(3,8) RUNLENGTH LIMITED CODE FOR MULTI-LEVEL DATA	McLaughlin	5/12/1995	5/5/1998
5,757,293	M=8(1,2) RUNLENGTH LIMITED CODE FOR MULTI-LEVEL DATA	McLaughlin	5/12/1995	5/28/1998
5,781,130	M-ARY (D,K) RUNLENGTH LIMITED CODING FOR MULTI-LEVEL DATA	McLaughlin	5/12/1995	7/14/1998
6,150,964	M=10(2,10), D=3.75 RUNLENGTH LIMITED CODE FOR MULTI-LEVEL DATA	McLaughlin	8/20/1997	11/21/2000

### Calimetrics Issued Foreign Patents (2)

Patent No.	Country	Title	Inventors	Filing Date	Issue Date
707392	Australia	Apparatus and Methods for Forming and Use with Variable Pit Depth Optical Recording Media	Wong, Spielman	3/24/1997	8/7/1999 (acceptance to be advertised)
2,249,403	Canada	Apparatus and Methods for Forming and Use with Variable Pit Depth Optical Recording Media	Wong, Spielman	3/24/1997	1/9/2001

**Pending Patent Applications:**

**Calimetrix Original US Patents Pending (14)**

Serial No.	Title	Inventors	Filing Date
09/373,916	High Density Data Write Strategy	O'Neill; Wong; Balasubrama; Bashaw; Learmonth; McDermott; Narayan; Powelson; Warland; Zhou	8/12/1999
09/478,395	Method and Format for Reading and Writing in a Multilevel Optical Disc System	Wong; Lewis; Lee; Ling; Pope; Spielman; Zingman	9/16/2003
09/498,898	Write Compensation for a Multi-Level Data Storage System	Powelson; Warland	2/2/2000
10/171,394	Advanced High Density Data Write Strategy	Balasubramanian; Hiestmaier; Narayan; Powelson; Stinebaugh; Warland; Zhou	8/12/2002
09/828,311	Digital Automatic Gain Control of a Multilevel Optical Disc Read Signal	Lo; Lee; Powelson; Spielman	4/8/2001
09/872,486	Synchronization in Multilevel Optical Data Storage	Lee; Spielman; Zingman; Lewis	5/31/2001
10/012,257	Write Compensation for Data Storage and Communication System	Powelson; Warland; Harvey; Lo; Pepin; Spielman; Zhou; Zingman; Lee	11/8/2001
09/823,852	High Density Analog Recording	Miyagawa; Mansuripur	3/29/2001
09/842,214	Method of Fabricating Sub-Micron Hemispherical and Hemicylindrical Structures from Non-Spherically Shaped Templates	Vezanov; Guerra; Warr; Sullivan	4/25/2001
09/842,098	Optical Storage Medium with Virtual Track Pitch	Vezanov; Guerra; Warr; Sullivan; Nelson	4/25/2001
10/057,774	Advanced Forward Error Correction	McLaughlin; Thangaraj	1/22/2002
10/387,232	Secure Data Storage	Wong; Harvey; Lee; Lewis; Spielman; Tan; Warland	3/11/2003
10/455,758	DC Control of a Multilevel Signal	Lee; Fan; Lo	8/5/2003
10/608,890	Generating a Multilevel Calibration Sequence for Precompensation	Lee	6/26/2003

**Calimetrics Foreign Patents Pending (7)**

App. No.	Country	Title	Inventors	Filing Date
97917035.4	Europe	Apparatus and Methods for Forming and Use with Variable Pit Depth Optical Recording Media	Wong and Spielman	3/24/97
33584/00	Australia	Method and Apparatus for Reading and Writing in a Multilevel Optical Disc	Wong; Fan; Lee, Ling, Lo, McLaughlin; McPheters, Martin, Powelson; Spielman; Warland, Zingman	2/8/2000
2,356,858	Canada	Method and Apparatus for Reading and Writing in a Multilevel Optical Disc	Wong; Fan; Lee, Ling, Lo, McLaughlin; McPheters, Martin, Powelson; Spielman; Warland, Zingman	2/8/2000
911733.4	Europe	Method and Apparatus for Reading and Writing in a Multilevel Optical Disc	Wong; Fan; Lee, Ling, Lo, McLaughlin; McPheters, Martin, Powelson; Spielman; Warland, Zingman	2/8/2000
2000-800,264	Japan	Method and Apparatus for Reading and Writing in a Multilevel Optical Disc	Wong; Fan; Lee, Ling, Lo, McLaughlin; McPheters, Martin, Powelson; Spielman; Warland, Zingman	8/10/2001
10-2001-7010512	Korea	Method and Apparatus for Reading and Writing in a Multilevel Optical Disc	Wong; Fan; Lee, Ling, Lo, McLaughlin; McPheters, Martin, Powelson; Spielman; Warland, Zingman	8/18/2001
200104098-9	Singapore	Method and Apparatus for Reading and Writing in a Multilevel Optical Disc	Wong; Fan; Lee, Ling, Lo, McLaughlin; McPheters, Martin, Powelson; Spielman; Warland, Zingman	2/8/2000